



EXHIBIT A
LISTING OF ALL CLAIMS AND AMENDMENTS
(04-07-2005)

Amendments to the claims:

Claim 1 (currently amended)

1. A drop hammer for driving a pile comprising:
a housing member defining a housing chamber and a vent port arranged between the lower and upper positions, where the vent port defines a preload position, and allows ambient air to flow into and out of the housing chamber under predetermined conditions; and
a ram member supported within the housing chamber for movement relative to the housing member between an upper position and a lower position;
a helmet member supported by the housing member for movement relative to the housing member between a rest position and an impact position; and
a lifting system for moving the ram member from the lower position to the upper position during each cycle; whereby
when the lifting system raises the ram member above the preload position, ambient air flows into the housing chamber;
when the ram member falls below the preload position, ambient air within a preload chamber portion of the housing chamber compresses to apply a preload force on the inner portion of the helmet member; and
when the ram member moves into the lower position, ~~the impact of the ram member impacts the helmet member to force the helmet member from the rest position to the impact position, thereby driving~~ drives the pile; and
~~when the ram member falls below a preload position between the lower and upper positions, fluid within a preload chamber portion of the housing chamber compresses as the ram member moves into the lower position.~~

Claim 2 (canceled)

Claim 3 (canceled)

Claim 4 (original)

4. A drop hammer as recited in claim 2, in which fluid is prevented from flowing through the vent port when the ram member is below the preload position.

Claim 5 (original)

5. A drop hammer as recited in claim 4, further comprising seal system for sealing the preload chamber portion of the housing chamber when the ram member is below the preload position.

Claim 6 (original)

6. A drop hammer as recited in claim 5, in which:
the ram member defines a ram side wall;
the housing member defines a housing interior wall;
the seal system comprises a ram seal for inhibiting fluid flow between the ram side wall and the housing interior wall.

Claim 7 (canceled)

Claim 8 (original)

8. A drop hammer as recited in claim 5, further comprising:
a helmet member supported by the housing member for movement relative to the housing member between a rest position and an impact position; wherein

the impact of the ram member is transmitted to the pile through the helmet member;
the helmet member extends through a helmet opening formed in the housing member; and
the seal system comprises a helmet seal for inhibiting fluid flow between the helmet member and the housing member through the helmet opening.

Claim 9 (original)

9. A drop hammer as recited in claim 8, in which:
the ram member defines a ram side wall;
the housing member defines a housing interior wall;
the seal system comprises a ram seal for inhibiting fluid flow between the ram side wall and the housing interior wall.

Claim 10 (canceled)

Claim 11 (original)

11. A drop hammer as recited in claim 1, further comprising a clamp assembly for securing the drop hammer to the pile.

Claim 12 (currently amended)

12. A drop hammer as recited in ~~claim 7~~claim 1, further comprising a clamp assembly for securing the helmet member to the pile.

Claim 13 (currently amended)

13. A method of driving a pile comprising:
providing a housing member defining a housing chamber;

forming a vent port between the lower and upper positions, where the vent port defines a preload position, and
allows ambient air to flow into and out of the housing chamber under predetermined conditions;
supporting a helmet member from the housing member for movement relative to the housing member between a rest position and an impact position; and
supporting a ram member within the housing chamber for movement relative to the housing member between an upper position and a lower position;
connecting the helmet member to the pile;
raising-lifting the ram member into the upper position during each cycle;
allowing the ram member to fall from the upper position to the lower position such that the impact of the ram member drives to force the helmet member from the rest position to the impact position, thereby driving the pile;
while the ram member is above a preload position, allowing fluid-ambient air to flow out of a preload chamber portion of the housing chamber defined by the housing member; and
while the ram member is below the preload position, substantially preventing fluid ambient air from flowing out of the preload chamber portion of the housing chamber, where fluid-ambient air within the preload chamber portion of the housing chamber compresses as the ram member moves from the preload position to the lower position to apply a preload force on the helmet member prior to impact of the ram member on the helmet member.

Claim 14 (canceled)

Claim 15 (original)

15. A method as recited in claim 13, further comprising the step of sealing the preload chamber portion of the housing chamber when the ram member is below the preload position.

Claim 16 (canceled)

Claim 17 (canceled)

Claim 18 (currently amended)

18. A drop hammer for driving a pile comprising:
a housing member defining a housing chamber and a vent port between the lower and upper positions;
a ram member supported within the housing chamber for movement relative to the housing member between an upper position and a lower position; and
a helmet member supported by the housing member for movement relative to the housing member between a rest position and an impact position; and a lifting system for raising the ram member from the lower position to the upper position during each cycle; whereby
as the ram member falls from the upper position to a preload position defined by the vent port, ambient air ~~between the lower and upper positions~~, fluid exits the housing chamber through the vent port;
when the ram member falls below the preload position, ~~fluid~~ ambient air within a preload chamber portion of the housing chamber below the vent port compresses as the ram member moves into the lower position to apply a preload force on the helmet member; and

when the ram member moves into the lower position, the impact of the ram member on the helmet member drives the pile.

Claim 19 (original)

19. A drop hammer as recited in claim 18, further comprising seal system for sealing the preload chamber portion of the housing chamber when the ram member is below the preload position.

Claim 20 (canceled)

Claim 21 (original)

21. A drop hammer as recited in claim 18, further comprising a clamp assembly for securing the helmet member to the pile.